Data Sheet

Fujitsu ServerView Suite ServerView® integrated Remote Management Controller - iRMC S3

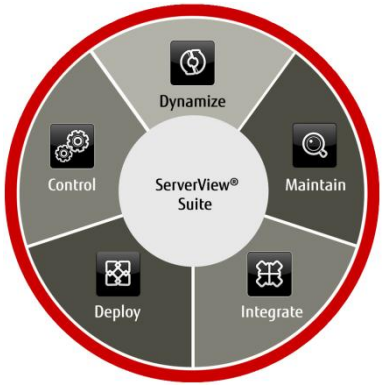
Extensive remote control with the integrated Remote Management Controller

The ServerView integrated Remote Management Controller iRMC S3 enables extensive control of Fujitsu PRIMERGY servers regardless of their system status – even in out-of-band operation. It integrates remote management functionality with the basic system management functions on a chip on the motherboard.

The iRMC S3 is an autonomous system on the motherboard of a Fujitsu PRIMERGY system. It has its own operating system, web server, user administration and alarm management and it is also supplied with power when the server is in standby mode. Communication is carried out via a LAN connection, which can be shared with the Fujitsu PRIMERGY system or used exclusively for system management.
The iRMC S3 forwards the signals from the keyboard, monitor and mouse digitally over the network. Apart from all free standard functions, an iRMC S3 advanced pack can be purchased enabling graphical console redirection - Advanced Video Redirection (AVR) - and the use of remote storage via USB.

The iRMC S3 gives administrators or service technicians access to the server for extensive control, even at decentralized locations. In the event of server problems, routine tasks and maintenance can be carried out efficiently.

The iRMC S3 is based on its successful predecessor iRMC S2 and provides additional functionality. With iRMC S3 the overall system performance can be monitored. Thereby operating system independent control of power consumption is possible. By means of the Customer Self Service (CSS) concept for certain server components customers can do service on their own.



Resourceful Server Management

Fujitsu ServerView Suite provides all the necessary elements for professionally managing server systems across their lifecycle. For information on other ServerView products please visit www.fujitsu.com/fts/serverview

Green IT

Features and Benefits

Main features	Benefits
■ Universal solution for all Fujitsu PRIMERGY servers	■ No limitation of iRMC S3 functions depending on the server model
■ Full remote control and analysis of Fujitsu PRIMERGY servers	■ Around-the-clock control, independent of the server status
■ Monitoring and control of power consumption	■ Specify the mode to control power consumption as required
■ Support of local service panel	■ Determine which system component is faulty and whether you can replace the faulty component yourself
■ Customer Self Service (CSS) concept	■ Avoid time-consuming and cost-intensive call-outs
■ Efficient graphical console redirection (AVR)	■ No need for expensive external KVM switches
■ Remote Storage for up to two media	■ Provides a "virtual" drive located elsewhere in the network

iRMC S3 - Hardware for Remote Management

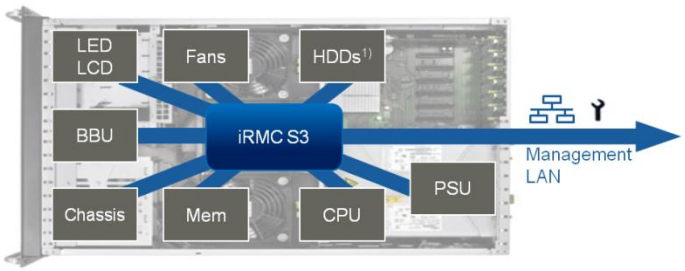
Remote configuration and maintenance minimize time-consuming and cost-intensive call-outs.

The iRMC S3 permits system control, diagnosis, configuration and server restarting by remote access via the integrated web interface – even if the operating system or hardware fails. Errors can be analyzed and often also rectified right away. The system administrator is notified by email or SMS. The iRMC S3 offers access to remote storage resources (floppy disk, memory stick, CD/DVD, ISO image) via USB. Genuine headless system operation without a local mouse and keyboard is supported.

The iRMC S3 communicates directly via I^2C with the hardware sensors, such as in fans. With introduction of the Fujitsu PRIMERGY RX200 S7 rack server the iRMC S3 has been enabled for the first time to monitor the internal hard disk drives (HDD) in out-of-band operation. But not only remote management tasks are performed by the iRMC S3, also the functions of a Baseboard Management Controller (BMC) are performed. It is thus able to take over functions such as power management or reading the System Error and Event Log (SEL) regardless of the system status.

The iRMC S3 offers enhanced security functions, including 128-bit SSL encryption and efficient user authentication to ensure maximum security.

iRMC S3 – integrated Remote Management Controller



1) initially in PRIMERGY RX200 S7: HDD out-of-band monitoring (additional systems will follow with future iRMC releases)

integrated Remote Management Controller - iRMC S3

iRMC S3 – Technical data

VGA	Resolution	Color (bpp)	Remarks
	1920 x 1200	8, 16	iRMC-3 FW > 6.25 required Linux support with SLES 11 ≥ SP2 RHEL 6 ≥ U3
	1920 x 1080	8, 16	iRMC-3 FW > 6.25 required Linux support with SLES 11 ≥ SP2 RHEL 6 ≥ U3
	1600 x 1200	8, 16	
	1680 x 1050	8, 16	Supported by Windows Linux support with SLES 11 ≥ SP2 RHEL 6 ≥ U3
	1440 x 900	8, 16	
	1280 x 1024	8, 16, 24, 32	
	1280 x 800	8, 16, 24, 32	
	1152 x 864	8, 16	
	1024 x 768	8, 16, 24, 32	
	800 x 600	8, 16, 24, 32	
	640 x 480	8, 16, 24, 32	
	32 MB attached memory		
USB	USB 1.1/USB 2.0		
IPMI	IPMI 2.0		
DCMI	DCMI 1.0		
Network	Shared / dedicated 10/100/1000 MBit/s IPv4 and IPv6 support		

iRMC S3 – System requirements

Managed Server	
Software	Windows Server 2008 all editions (32/64 bit; ≥SP2) Windows Server 2008 R2 all editions (≥SP1) Windows SBS 2011 Windows Server 2012 all editions SuSE Linux Enterprise Server 10 (x86/EM64T/XEN; ≥SP4) SuSE Linux Enterprise Server 11 (x86/EM64T/XEN; ≥SP1) Red Hat Enterprise Linux 5 (x86/EM64T/XEN; ≥U6) Red Hat Enterprise Linux 6 (x86/EM64T/KVM; ≥U1) Note: not all operating systems have been released for all the hardware
Hardware	Fujitsu PRIMERGY server models: BX920 S3, BX924 S3 RX100 S7, RX100 S7p, RX200 S7, RX300 S7, RX350 S7, RX500 S7 TX120 S3, TX120 S3p, TX140 S1, TX140 S1p, TX150 S8, TX200 S7, TX300 S7
Administrator System	
Software	Microsoft Internet Explorer Version from Version 8.x Mozilla Firefox from Version 4.x (Windows and Linux version only)
Hardware	Standard PC, LAN

Notes:
- There may be import restrictions for some countries due to the 128-bit encryption.
- Depending on the server or operating system used, certain management functions may differ or not be available.

Standard functions of the iRMC S3

Browser Access

The iRMC S3 has its own web server, which can be accessed from the management station with a standard web browser. All sensor information, such as fan speeds, voltages, etc., and the complete configuration of the iRMC S3 are made available to administrators via the web user interface.

Security (SSL, SSH)

Access to the web server and the optional graphical console redirection, including the mouse and keyboard, can be protected by HTTPS/SSL (128-bit). Incorrect logins will be logged. To enable access to iRMC S3 via the Remote Manager cryptographically secured communication can be established, which is protected by the SSH mechanisms. The Remote Manager is an alphanumerical user interface of the iRMC S3.

ServerView Operation Manager Integration

The ServerView agents detect the iRMC S3 and automatically assign it to the server in question. Text console redirection via the Remote Management web user interface and the web interface can be started directly from ServerView Operations Manager.

Power Management

Regardless of the system status, the following options for switching on/off the server from a remote workplace are provided:
- via the iRMC S3 web interface
- via the *Power Control* menu of the AVR window
- via the Remote Manager and the command line interface (CLI)
- per script

In this way, the server can be powered on, a power cycle can be initiated or the server can be gracefully shut down or shut down instantly (power button override), e.g. if the operating system no longer responds. In addition, an immediate or graceful reset (reboot) can be initiated.

integrated Remote Management Controller - iRMC S3

Power Consumption Monitoring

To monitor system power consumption via the web interface several reports are provided. You can choose between reports for a single day, for a month or a year. Please note that Power Consumption Monitoring is not supported by all power supplies.

Power Consumption Control

Besides power monitoring also an operating system independent power consumption control is possible. The following operating states are selectable:

- Minimal Power Consumption: The CPU works always at lowest frequency and voltage
- Power Limit: Restricts the max. power consumption of the server
- Best Performance: Whole frequency and voltage bandwidth is available and can be selected by the operating system.
- Schedule: Allows switching between the above mode-depending on day of the week and time.
- Low Noise: iRMC S3 controls the server to achieve the lowest possible noise emission.

(These settings are CPU specific and are not available for all CPU types and Fujitsu PRIMERGY servers)

Text Console Redirection

A Telnet session can be initiated on the iRMC S3 via the Remote Management web front-end. The Remote Manager is then called, by means of which text console redirection can be started, power management carried out, the error event log read or sensor information queried. Beside Telnet there is SOL (serial over LAN) and SSH (secure Shell) supported.

Headless System Operation

A keyboard, monitor and mouse are not required on the managed server. As a result, costs are reduced, cabling in the rack is simplified considerably and security is increased. Connection speed is optimized to the line bandwidth available.

LAN

In most Fujitsu PRIMERGY systems one LAN interface of the built-in NIC (network interface card) is reserved for the management LAN. In the remaining systems the LAN interface can be configured optionally for

- exclusive use by the management LAN
- shared operation with the system
- exclusive use by the system.

The management LAN interface of the system NIC is indicated by a wrench icon – it supports IPv4 and IPv6.

Identification LED

The Identification LED of the managed system can be switched on via the iRMC S3 web interface to identify the system, for example in a fully configured rack.

Command Line Interface (CLI)

The iRMC S3 not only supports the Remote Manager, but also the SMASH CLP (System Management Architecture for Server Hardware Command Line Protocol) standardized by the DMTF (Distributed Management Task Force).

Simple Configuration – interactive or scripted

The following tools are available to configure the iRMC S3:

- iRMC S3 web interface
- WinSCU
- BIOS Setup

Scripted configuration via WinSCU or IPMIVIEW is also possible. In this way, the iRMC S3 can also be configured during initial setup of the server with ServerView Installation Manager. Scripting is also possible to configure a large number of servers simultaneously.

Local User Management

The iRMC S3 has its own user management system, in which up to 16 users with passwords can be created and granted different rights, depending on the group to which they belong.

User Management via Directory Service

The protocol used is LDAP (Lightweight Directory Access Protocol) or secure LDAP. The directory services Active Directory, openLDAP and eDirectory are supported. Therewith users can be managed centrally and have not to be managed via the iRMC S3.

DNS / DHCP

The iRMC S3 supports automatic network configuration. It has a default name and DHCP (Dynamic Host Configuration Protocol) is enabled so that iRMC S3 obtains its IP address from the DHCP server (in IPv4 only). The iRMC S3 name is registered with the Domain Name Service (DNS). Up to 5 DNS servers are supported. If no DNS/DHCP is available, static IP addresses are supported.

Online Firmware Update

The iRMC S3's firmware can be updated online since there are two independent images of the firmware on the motherboard. In case an error occurs during flashing, the redundant module can always be used as a backup (Secure Flash).

integrated Remote Management Controller - iRMC S3

Power Supply

Power to iRMC S3 is provided from the Fujitsu PRIMERGY system's internal standby power supply.

Alarm Management

The iRMC S3's alarm management system offers the following possibilities for alarm forwarding (alerting):

- Platform Event Traps (PETs) are sent via SNMP
- Direct notification by e-mail
- If the Fujitsu PRIMERGY systems provides a serial interface a modem can be connected for sending alerts (e.g. by SMS to a mobile phone).

In addition, the iRMC S3 supplies the ServerView agents with all relevant information.

Reading and Editing the System Error and Event Log (SEL)

The contents of the SEL can be viewed and deleted

- via the iRMC S3 web interface or
- via the Telnet-based interface (Remote Manager) of the iRMC S3.

The SEL can be stored locally via the web interface.

Customer Self Service (CSS)

Not all components of a Fujitsu PRIMERGY server have to be replaced by Service. There are components you can replace on your own. These components are marked in the iRMC S3 web interface. This information is provided in ServerView Operations Manager as well. Additionally, a link is provided for easy purchasing of new CSS components.

Memory Prefailure Analysis

The iRMC S3 takes care of memory prefailure analysis.

Optional components

The following components provide information on the system state directly at the server. Please note that these optional components are not available for all Fujitsu PRIMERGY servers and their usage also depends on the system's configuration.

ServerView Local Service Display (LSD)

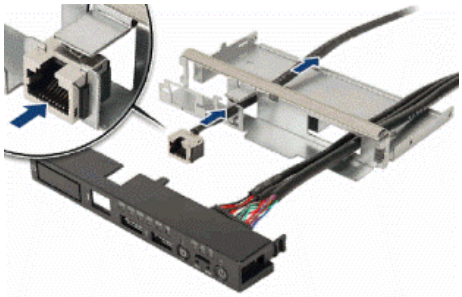
The LSD is a LC-Display with 2x20 characters and a four-way navigation key. Among others error messages, Customer Self Service (CSS) information or system information can be retrieved via several information pages.

ServerView Local Service Panel (LSP)

The LSP is a display providing information on component states. In addition via LEDs information is provided which components you can replace on your own. The LSP is built into the front of the Fujitsu PRIMERGY system.

ServerView Front Service LAN Port (RJ45)

The Front Service LAN option (10/100 Mbit/s) allows an easy and convenient access to the iRMC S3 of an individual server especially when service tasks are to be carried out locally.



Picture shows Front Service LAN option for Fujitsu PRIMERGY TX140 S1

integrated Remote Management Controller - iRMC S3

Enhanced functions of the iRMC S3 Advanced Pack

On top of standard functionality, the iRMC S3 additionally provides the functions Advanced Video Redirection (AVR) and Remote Storage.
The enhanced functionality is enabled by means of a release key that can be ordered either together with the Fujitsu PRIMERGY system (S26361-F1790-E242) or subsequently (S26361-F1790-L242) and loaded via the web interface.
The iRMC Advanced Pack is included for free in the basic configuration of Fujitsu PRIMERGY server blades.

Advanced Video Redirection (AVR)

Advanced Video Redirection with iRMC S3 offers the following benefits:

- Operation via a standard web browser; no additional software except Java Runtime Environment must be installed on the management station.
- System-independent graphics and text console redirection, including the keyboard and mouse
- Remote access to permit boot monitoring, BIOS administration and interaction with the operating system
- AVR offers up to two simultaneous "virtual connections" for working on a server from a different location. In addition, AVR minimizes the network load by means of hardware and video compression.

Remote Storage

Remote Storage makes available to the managed server a "virtual" drive which is located elsewhere in the network. The "virtual drives" provided by Remote Storage are as easy to use as local drives and offer the following options:

- Reading/writing of data
- Booting from Remote Storage
- Installation of drivers or small applications
- Remote BIOS update (BIOS update via USB)

Remote Storage permits simultaneous connection of up to two "virtual" drives and supports the following types of device:

- Floppy disk
- CD-ROM / DVD-ROM
- USB memory device (e.g. Memory Stick)
- ISO image

More information

Fujitsu platform solutions

In addition to Fujitsu ServerView Suite, Fujitsu provides a range of platform solutions. They combine reliable Fujitsu products with the best in services, know-how and worldwide partnerships.

Fujitsu Portfolio
Build on industry standards, Fujitsu offers a full portfolio of IT hardware and software products, services, solutions and cloud offering, ranging from clients to datacenter solutions and includes the broad stack of Business Solutions, as well as the full stack of Cloud offering. This allows customers to leverage from alternative sourcing and delivery models to increase their business agility and to improve their IT operation's reliability.

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Using our global know-how, we aim to contribute to the creation of a sustainable environment for future generations through IT.
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